ISSN: 0975-3583, 0976-2833 VOL15, ISSUE7, 2024

Original Research Article

A Prospective cross-sectional study to estimate the strength of correlation between colposcopic impression using Reid's Colposcopic Index and Histopathological grading of premalignant lesions of Cervix

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Abstract

Background & Methods: The aim of the study is to estimate the strength of correlation between colposcopic impression using Reid's Colposcopic Index and Histopathological grading of premalignant lesions of Cervix.

Results: 65 cases of CIN diagnosed by colposcopy, maximum 52(80%), had 1st child birth between 16-20 yrs. All 5 (100%) women who delivered 1st child after 25 yrs had cervical inflammation only confirmed by histopathology. It is evident from the above table that most common complaint was discharge per vaginum (74.7%) followed by menstrual irregularities (33.0%).

Conclusion: Colposcopy is more than an intermediate link between cytology and histopathology. Colposcopy is a highly sensitive tool in the early diagnosis of dysplasia and invasive cancer. Previously, due to lack of standard diagnostic protocols in conventional colposcopy caused interpretation difficulties, thus the main drawback being interobserver variability. Therefore in the present study we made colposcopic assessment by a scoring system, Reid's Colposcopic Index (RCI) that correlates colposcopic impression with histologic severity. The RCI scoring system is not only useful in taking directed biopsy but also useful for further follow up of low grade lesions, provided site specification is added. Hence, it greatly simplifies learning colposcopy.

Keywords: colposcopic, histopathological, premalignant, lesions & cervix.

Study Design: Comparative Study.

Introduction

"Cancer of the uterine cervix is now regarded as a preventable disease" – this statement by World health Organization cancer committee in 1963 was a milestone in the history of cervical cancer. As per Globocan 2012 Database , cervical cancer is fourth most common cancer in women with an estimated 528,000 new cases and 266,000 deaths , accounting for 7.5% of all female cancer deaths worldwide[1]. Around 85% of burden occur in less developed countries, where it accounts 12% of all female cancers. More and less developed regions of the world

ISSN: 0975-3583, 0976-2833 VOL15, ISSUE7, 2024

differ not only in cervical cancer incidence but in it's mortality too. In less developed regions were more than half of the cases result in deaths, less than one third die in more developed regions1. Thus these incidence and mortality rates exemplifies inequity in the implementation of effective and widespread screening programmes aimed at detecting precancerous condition and treating them before they progress to invasive state[2].

In India, in 2002, 134,000 new cases were reported and about 72,600 women died of the disease2. Even after a decade, in 2012, no significant decline in the incidence (123,000) as well as mortality (67,000) has been observed in the country. Despite the fact that maximum number of cervical cancer cases are in developing countries, only 5% of women have ever been screened for cervical epithelial abnormalities as compared with 40-50% of women in developed countries[3].

Human papiloma viral (HPV) DNA has been found in almost all cases of invasive cervical cancer (Bosch and de Sanjosé, 2003), making cervical cancer a chronic disease with an infectious aetiology. Around 3-10% of women with HPV develops persistent infections, and are at high risk of developing cervical cancer. The fact that precancerous changes in cervical epithelium can linger for years, make programs focusing on "secondary prevention", that is, detection and treatment of precancerous lesions, instrumental in preventing cervical cancer cases and deaths[4-7].

Material and Methods

The present study was conducted on 150 women with abnormal cervices in the Department of Obstetrics and Gynaecology, Sewakunj Hospital, Gynae OPD, Indore (M.P.), from Jan 2023 to Jan 2024. Data Source: Symptomatic patients with symptoms like vaginal discharge, postmenopausal bleeding, postcoital bleeding, pain abdomen, other gynaecological problems and asymptomatic patients with accidental finding of unhealthy cervix on examination who attended outpatient department of Obst. & Gyane.

On gist visit to OPD, after taking history as per proforma, patient was put in dorsal position and P/S examination was done for either including or excluding the case from study. If possible sample for cytology was collected & sent for cytological examination. On next visit patient attended with cytology report and accordingly advised colposcopy. Patient was counseled regarding the procedure, put on lithotomy position and colposcope was brought to focus. Visual inspection of vulva and perineal area was done under bright light. After all preliminary preparations, the widest possible cusco's speculum was inserted in vagina to obtain a good view of cervix, which was cleaned with normal saline. Then the patient was subjected to colposcope, initially in low power and then under higher magnifications. When squamo-columnar junction was completely visible, colposcopy was termed satisfactory. Cervix was studied clock wise for various vascular patterns without and then with green filter and other abnormalities. Further 5% freshly prepared glacial acetic acid was applied for 1 minute and acetowhiteness was studied with respect to colour, tone, surface, margin and duration of stay. Lugol's Iodine test was applied and area with mustard yellow or brown colour was looked for. The Reid's Colposcopic scoring was done and depending upon the findings, biopsy was taken from suspicious lesion and sent for HPR examination in labeled bottle with fixative and haemostasis achieved. 9• Speculum was removed and patient was allowed to recover.

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Method of selection: Patients above 16 years of age with varied parity and socioeconomic status with following exclusion/ inclusion criteria:

Exclusion Criteria: 1. Pregnancy

2. Vaginitis

3. Patient on intravaginal medication

4. Patient in menses

5. Obvious cervical growth at the time of examination.

6. Post hysterectomy

7. Post radiation.

Inclusion Criteria: 1. Suspicious symptoms like vaginal discharge, postcoital or inter menstrual bleeding and postmenopausal bleeding.

Result

Table 1: Age wise distribution and correlation of Colposcopic to histopathological diagnosis

Age (yrs)	Total No.	Colposcopic Diagnosis (RCI)						Histopathological Diagnosis				
		Norm	Inf	CIN1	CIN2	CIN3	Inv Ca	Inf	Mild dysp	Mod dysp	Severe dysp	Inv Ca
20-30	38 (25.3%)	4 (10.5%)	22 (57.9%)	10 (26.3%)	2 (5.3%)	0 (0.0%)	0 (0.0%)	31 (81.6%)	5 (13.2%)	2 (5.3%)	0 (0.0%)	0 (0.0%)
31-40	57 (38.0%)	3 (5.3%)	25 (43.8%)	16 (28.1%)	10 (17.5%)	3 (5.3%)	0 (0.0%)	31 (54.4%)	16 (28.1%)	7 (12.3%)	3 (5.3%)	0 (0.0%)
41-50	31 (20.7%)	12 (38.7%)	9 (29.1%)	4 (12.9%)	3 (9.7%)	3 (9.7%)	0 (0.0%)	23 (74.2%)	2 (6.5%)	3 (9.7%)	3 (9.7%)	0 (0.0%)
51-60	19 (12.7%)	3 (15.7%)	4 (15.8%)	3 (15.8%)	4 (21.1%)	3 (15.8%)	2 (10.5%)	6 (31.6%)	6 (31.6%)	2 (10.5%)	3 (15.8%)	2 (10.5%)
>60	5 (3.3%)	0 (0.0%)	0 (0.0%)	1 (20%)	2 (40%)	1 (20%)	1 (20%)	0 (0.0%)	1 (20%)	2 (40%)	1 (20%)	1 (20%)
TOTAL	150 (100%)	22 (14.7%)	60 (40%)	34 (22.7%)	21 (14%)	10 (6.7%)	3 (2%)	91 (60.7%)	30 (20%)	16 (10.7%)	10 (6.7%)	3 (2%)

Colposcopic diagnosis-χ^2=57.855; p‹0.0001 Extremely Significant

Histopathological Diagnosis-χ^2=46.189; p‹0.0001 Extremely Significant

The mean age of population in present study was 38.1(±10) yrs. Majority, (38%) of cases belonged to the age group 31-40 yrs , out of them 51% cases were of CIN,

ISSN: 0975-3583, 0976-2833 VOL15, ISSUE7, 2024

45.7% were further confirmed by histopathology. Out of 24 cases studied beyond the age of 51, majority (14) were CIN and 3 were invasive cancer detected colposcopically.

Table 2: Paritywise distribution and correlation of Colposcopic to histopathological diagnosis

Parity	Total No.	Colposcopic Diagnosis(RCI)						Histopathological Diagnosis				
		Norm	Inf	CIN1	CIN2	CIN3	Inv Ca	Inf	Mild dysp	Mod dysp	Severe dysp	Inv Ca
P_1	16 (10.7%)	4 (25.0%)	8 (50.0%)	2 (12.5%)	2 (12.5%)	0 (0.0%)	0 (0.0%)	15 (93.7%)	1 (6.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
P_2	49 (32.7%)	9 (18.4%)	27 (55.1%)	8 (16.3%)	3 (6.1%)	2 (4.1%)	0 (0.0%)	41 (83.7%)	8 (16.3%)	2 (4.1%)	0 (0.0%)	0 (0.0%)
P_3	33 (22.0%)	6 (18.2%)	10 (30.3%)	10 (30.3%)	4 (12.1%)	3 (9.1%)	0 (0.0%)	18 (54.5%)	7 (21.2%)	3 (9.1%)	3 (9.1%)	0 (0.0%)
$>P_3$	52 (34.7%)	3 (5.8%)	15 (28.8%)	14 (26.9%)	12 (23.1%)	5 (9.6%)	3 (5.8%)	17 (32.7%)	14 (26.9%)	11 (21.2%)	7 (13.5%)	3 (5.8%)
TOTAL	150 (100%)	22 (14.7%)	60 (40.0%)	34 (22.7%)	21 (14.0%)	10 (6.7%)	3 (2.0%)	91 (60.7%)	30 (20.0%)	16 (10.7%)	10 (6.7%)	3 (2.0%)

Colposcopic diagnosis-χ^2=26.679; p= 0.0315 Significant

Histopathological Diagnosis-χ^2=39.652; p<0.0001 Extremely Significant

It is evident from above table that increase in parity was associated with increase in severity of the disease. Out of 52 cases of parity >3, 32 (60%) were confirmed to have dysplasia, in contrast , only 1 case of parity one had mild dysplasia .Invasive cancers were found in para >3

ISSN: 0975-3583, 0976-2833 VOL15, ISSUE7, 2024

Table 3: Distribution according to contraceptive method and correlation of Colposcopic to histopathological diagnosis

Contra--ceptive method	Total No.	Colposcopic Diagnosis(RCI)						Histopathological Diagnosis				
		Norm	Inf	CIN1	CIN2	CIN3	Inv Ca	Inf	Mild dysp	Mod dysp	Severe dysp	Inv Ca
Non users	68 (45.3%)	8 (11.8%)	20 (29.4%)	15 (22.1%)	15 (22.1%)	7 (10.3%)	3 (4.4%)	31 (47.1%)	15 (22.1%)	11 (16.2%)	8 (11.8%)	3 (4.4%)
Permanent	39 (26.0%)	5 (12.8%)	14 (35.4%)	12 (30.8%)	5 (12.8%)	3 (7.7%)	0 (0.0%)	20 (51.3%)	12 (30.8%)	5 (12.8%)	2 (5.1%)	0 (0.0%)
IUCD	12 (8.0%)	2 (16.7%)	6 (50.0%)	4 (33.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	10 (83.3%)	2 (16.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Barrier	24 (16.0%)	6 (25.0%)	15 (62.5%)	2 (8.3%)	1 (4.2%)	0 (0.0%)	0 (0.0%)	24 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
OCPs	7 (4.7%)	1 (14.3%)	5 (71.4%)	1 (14.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (85.7%)	1 (14.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
TOTAL	150 (100%)	22 (14.7%)	60 (40.0%)	34 (22.7%)	21 (14.0%)	10 (6.7%)	3 (2.0%)	91 (60.7%)	30 (20.0%)	16 (10.7%)	10 (6.7%)	3 (2.0%)

Colposcopic diagnosis-χ^2=28.932; p= 0.0891 Not Significant

Histopathological Diagnosis-χ^2=34.327; p=0.0049 Significant

In present study45.3% cases were not using any method of contraception, out of them maximum (54.3%) women had preinvasive lesions & invasive carcinoma (4.4%) diagnosed colposcopically .Maximum high grade dysplastic lesions were found in non-users (27.9%) and those had permanent sterilization (17.9%) and none with the use of barrier, IUCD and OC pill users.

ISSN: 0975-3583, 0976-2833 VOL15, ISSUE7, 2024

Table 4: Distribution according to age at 1st child birth and correlation of Colposcopic to histopathological diagnosis

Age at 1st child birth (in yrs)	Total No.	Colposcopic Diagnosis(RCI)						Histopathological Diagnosis				
		Norm	Inf	CIN1	CIN2	CIN3	Inv Ca	Inf	Mild dysp	Mod dysp	Severe dysp	Inv Ca
16-20	108 (72.0%)	10 (9.3%)	43 (39.8%)	26 (24.1%)	17 (15.7%)	9 (8.3%)	3 (2.8%)	57 (52.8%)	24 (22.2%)	14 (12.9%)	10 (9.3%)	3 (2.8%)
21-25	37 (24.7%)	9 (24.3%)	15 (40.5%)	8 (21.6%)	4 (10.8%)	1 (2.7%)	0 (0.0%)	29 (78.4%)	6 (16.2%)	2 (5.4%)	0 (0.0%)	0 (0.0%)
›25	5 (3.3%)	3 (60.0%)	2 (40.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
TOTAL	150 (100%)	22 (14.7%)	60 (40.0%)	34 (22.7%)	21 (14.0%)	10 (6.7%)	3 (2.0%)	91 (60.7%)	30 (20.0%)	16 (10.7%)	10 (6.7%)	3 (2.0%)

Colposcopic diagnosis-χ^2=16.786; p= 0.0792 Not Significant

Histopathological Diagnosis-χ^2=12.911; p=0.1150 Not Significant

It is evident from above table that out of 65 cases of CIN diagnosed by colposcopy, maximum 52(80%), had 1st child birth between 16-20 yrs. All 5 (100%) women who delivered 1st child after 25 yrs had cervical inflammation only confirmed by histopathology.

Table 5: Association with various clinical complaints

Clinical complaints	No. of cases	Percentage (%)
Discharge per vaginum	112	74.7%
Pain Abdomen	28	18.3%
Itching in private parts	23	15.8%
Menstrual Irregularities	48	33.0%
Post coital bleeding	11	7.5%
Post-menopausal bleeding	15	10.0%
Asymptomatic	18	11.7%

It is evident from the above table that most common complaint was discharge per vaginum (74.7%) followed by menstrual irregularities (33.0%)

ISSN: 0975-3583, 0976-2833 VOL15, ISSUE7, 2024

Discussion

Increase in parity is associated with increase in severity of disease. In present study, out of 65 cases of CIN, 13(20%) were of parity two; 17 (26.2%) of parity three and 31(47.7%) were of parity more than three. Para 3 and more was associated with maximum (61.5%) dysplasia and 3cases of invasive cancer confirmed by histopathology[8].

In a study by Mayavati Mhaske et al (2011), significant association was present between multiparity and development of dysplasia / carcinoma cervix. In women with parity more than 4, 26.3% had dysplasia /cancer cervix in contrast to 13.9% in women with parity ≤ 4. In a study by Kamna Gupta et al (2013)158, frequency of dysplasia and cervical carcinoma[9-11].

In present study out of 150 cases ,108(72%) women gave birth to their 1st child at age less than 20 yrs, of which 52(48.1%%) were CIN by colposcopy.100% of women who delivered their 1st child after 25 yrs were symptomatic and were diagnosed to have cervical inflammation by histopathology[12].

In a study by Mayavati Mhaske et al (2011) it was observed that , maximum (30.95%) women had their 1st childbirth at the age ≤ 18 years, whereas only 4.76% of women delivered their 1st child after 20 yrs of age. 88.88% of women with dysplasia had delivered their 1st child at or before 18 years. In the study by Yusuf N et al (2011) [13], 12% delivered at age less than 15 year, 62% between 15-20 year, 20% between 21-25 year and 6% at age more than 25 year .

In a study by Kamna Gupta et al (2013), the frequency of LSIL was maximum in cases with >30 years age at first child birth, while HSIL and cervical cancer was maximum who delivered <20 yrs[14].

In present study, out of 150 women, discharge per vaginum was most common complaint in 74.7% women, followed by menstrual irregularities in 33% and pain in abdomen in 18.3%.

In the study by Neerja Bhatla (2007) [15], the presenting complaint was vaginal discharge in 80% cases, irregular vaginal bleeding in 30.0% cases and post coital bleeding in one woman. Similarly in Patiala study by Ashi R Sareen (2001)183 leucorrhoea was the commonest overall complaint. Another study by Dhiraj B Nikumbh et al [16] (2009) leucorrhoea (69.3%) was the main complaint followed by low backache (33.5%) and irregular P\V bleeding (12.2%).

Conclusion

Colposcopy is more than an intermediate link between cytology and histopathology. Colposcopy is a highly sensitive tool in the early diagnosis of dysplasia and invasive cancer. Previously, due to lack of standard diagnostic protocols in conventional colposcopy caused interpretation difficulties, thus the main drawback being interobserver variability. Therefore in the present study we made colposcopic assessment by a scoring system, Reid's Colposcopic Index (RCI) that correlates colposcopic impression with histologic severity. The RCI scoring system is not only useful in taking directed biopsy but also useful for further follow up of low

ISSN: 0975-3583, 0976-2833 VOL15, ISSUE7, 2024

grade lesions, provided site specification is added. Hence, it greatly simplifies learning colposcopy.

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